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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/807,067	04/06/2001	Walter Jan August De Coster	PHQ99.010	2192

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EXAMINER

GUERRERO, MARIA F

ART UNIT PAPER NUMBER

2822

DATE MAILED: 06/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/807,067

Applicant(s)

DE COSTER ET AL.

Examiner

Maria Guerrero

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the Preliminary Amendment filed April 6, 2001.

Claims 1-9 are pending.

Priority

2. This Application is a 371 of PCT/EP00/07519 filed August 2, 2000.

Specification

3. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

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- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The disclosure is objected to because of the following informalities: it is suggested to delete the expression "Figure 8", on the abstract, line 11.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 6 recite the expression "predetermine depth"; the term "predetermine" rendered the claims indefinite.

Claim 9 recites the limitation "said trench extending from the lateral edge of the larger isolation layer of the lateral isolation region". The claim is vague and indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1-4, 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawaguchi (U.S. 5,739,573) (cited by Applicant).

Kawaguchi teaches forming spacers at the sides of a projecting polysilicon region, the spacers having a smaller isolation layer in contact with the projecting polysilicon region, and a larger isolation layer (Fig. 5B-5B, col. 10, lines 10-33). Kawaguchi discloses anisotropically etching at least the vertical portion of the smaller isolation layer to form a trench, the trench being between the larger isolation layer and the corresponding side of the projecting polysilicon region, and the depth of trench being equal to maximally half the height of the larger isolation layer and maximally half

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the thickness of the larger isolation layer (Fig. 5C, col. 10, lines 35-50). Kawaguchi teaches subjecting the projecting polysilicon region to a silicidation process by directional depositing a metal layer capable of forming a metal silicide (Fig. 5D-5E, col. 10, lines 65-67, col. 11, lines 1-30).

Kawaguchi teaches an integrated circuit comprising lateral isolation regions formed at the sides of at least one projecting region of polysilicon (Fig. 5B, 7B). Kawaguchi shows each lateral region being composed of a smaller isolation layer and a larger isolation layer, each lateral isolation region comprising a vertical trench made in the smaller isolation layer (Fig. 5C, 7C). Kawaguchi teaches the integrated circuit comprising a metal silicide situated in the upper part of the polysilicon region (Fig. 5E, 7E).

6. Claims 1, 5-6, and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Lur et al. (U.S. 6,013,569).

Lur et al. teaches forming spacers at the sides of a projecting polysilicon region, the spacers having a smaller isolation layer in contact with the projecting polysilicon region, and a larger isolation layer (Fig. 7-8, col. 8, lines 10-35). Lur et al. discloses isotropically etching at least the vertical portion of the smaller isolation layer to form a trench, the trench being between the larger isolation layer and the corresponding side of the projecting polysilicon region (Fig. 8, col. 8, lines 45-65). Lur et al. teaches subjecting the projecting polysilicon region to a silicidation process by directional depositing a metal layer capable of forming a metal silicide (Fig. 9, col. 9, lines 3-15, 35-45).

In addition, Lur et al. teaches an integrated circuit comprising lateral isolation regions formed at the sides of at least one projecting region of polysilicon, each lateral region being composed of a smaller isolation layer and a larger isolation layer. Lur et al. shows each lateral isolation region comprising a vertical trench made in the smaller isolation layer, a horizontal trench made in the smaller isolation layer between the larger isolation layer and the substrate (Fig. 8). Lur et al. teaches the integrated circuit comprising a metal silicide situated in the upper part of the polysilicon region (Fig. 9).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jan et al. (U.S. 6,235,598), Tseng et al. (U.S. 5,920,783), Givens et al. (U.S. 5,268,330), and Verhaar et al. (U.S. 5,015,598) show forming spacers on a polysilicon gate, forming a trench on the smaller spacer, and forming a metal silicide on the top of the polysilicon gate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Guerrero whose telephone number is 703-305-0162.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on 703-308-4940. The fax phone numbers for the organization where this application or proceeding is assigned are 703-


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308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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June 25, 2002


CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
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